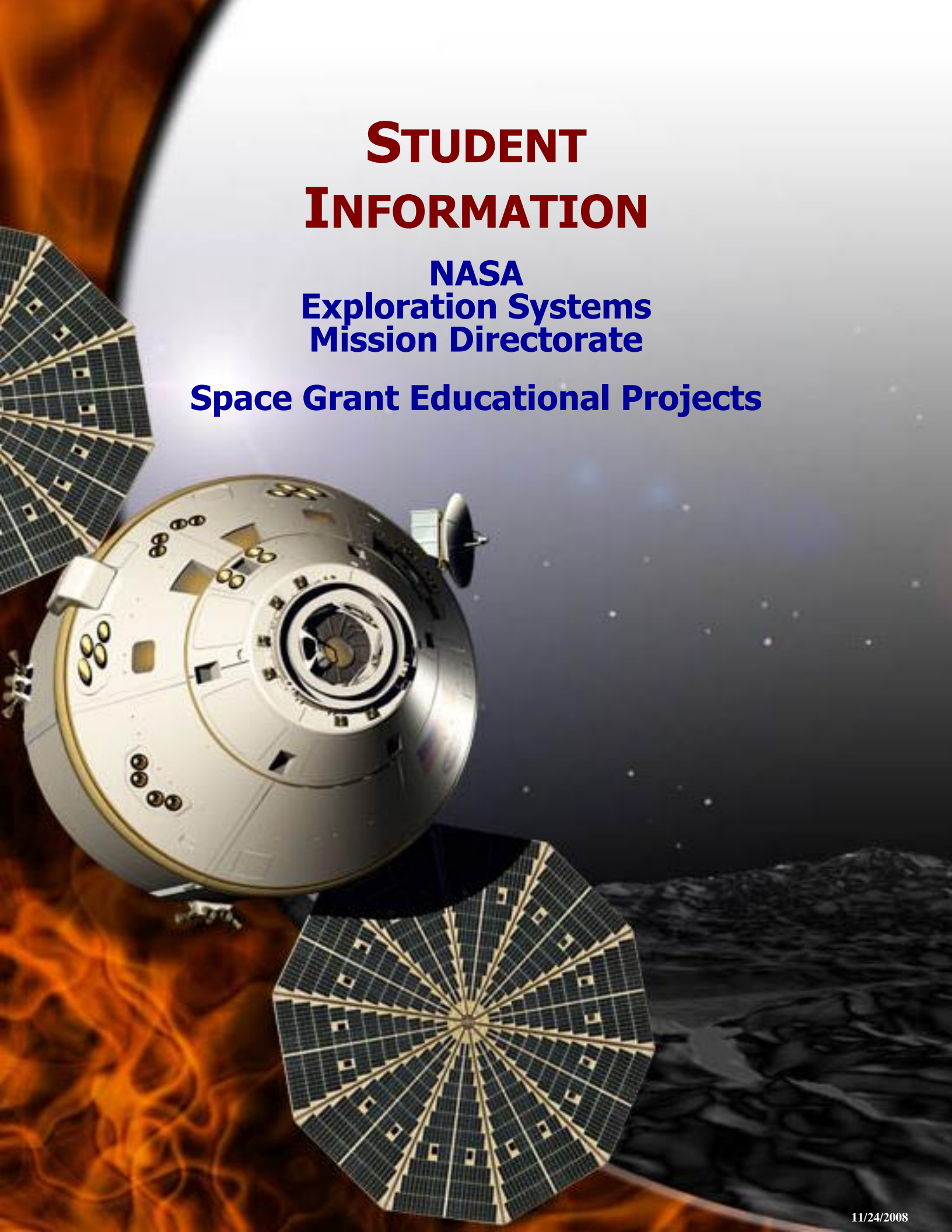# STUDENT

INFORMATION

NASA
Exploration Systems
Mission Directorate

Space Grant Educational Projects

TABLE OF CONTENTS

SECTION 1
INTRODUCTION

Contact Information

Gloria Murphy
ESMD Student Project Manager
NASA KSC
(321) 867-8934
Gloria.A.Murphy@nasa.gov

Susan Sawyer
ESMD Space Grant Project Specialist
REDE/Critique, JV
NASA KSC Education Programs
(321) 867-5482
Susan.G.Sawyer@nasa.gov

Mandi Falconer
ESMD Space Grant Project Specialist
REDE/Critique, JV
NASA KSC Education Programs
(321) 867-4439
Mandi.C.Falconer@nasa.gov

Background

On January 14, 2004, President George W. Bush gave NASA a defining challenge for the 21st century with compelling new objectives outlined in the Vision for Space Exploration. The Vision commits our Nation to a new journey of exploration of the solar system, beginning with the return of humans to the Moon by the end of the next decade, and leading to subsequent landings on Mars and other destinations, such as near-Earth asteroids.

The fundamental goal of the Vision is "to advance U.S. scientific, security, and economic interests through a robust space exploration program."

The Exploration Systems Mission Directorate (ESMD) is dedicated to creating a constellation of new capabilities, supporting technologies and foundational research that enables sustained and affordable human and robotic exploration.

The purpose of the ESMD Higher Education Grants is to train and develop the highly skilled scientific, engineering, and technical workforce of the future needed to implement the Vision for Space Exploration.

The following are areas critical to the future of space exploration:

Spacecraft

Guidance, navigation and control; thermal; electrical; structures; software; avionics; high speed re-entry; modeling; power systems; interoperability/commonality; advanced spacecraft materials; crew/vehicle health monitoring; life support

Propulsion

Propulsion methods that will utilize materials found on the moon or Mars, "green" propellants, on-orbit propellant storage, motors, testing, fuels, manufacturing, soft landing, throttleable propellants, high performance, and descent.

Lunar and Planetary Surface Systems

Precision landing hardware, software, in-situ resource utilization (ISRU), navigation systems, extended surface operations, robotics, environmental analysis, radiation protection, spacesuits, life support, and power systems.

Ground Operations

Pre-launch, launch, mission operations, command and control software systems, communications, landing and recovery.

Two ways that we are working in partnership with the Space Grants to reach our goals are Exploration Internships that provide students ESMD-relevant work experience in industry or at a NASA center where students are engaged in hands-on engineering projects with a strong and involved mentor and Exploration Senior Design Projects that Integrate ESMD-provided mission challenges into university senior design courses.

Information Links

http://education.ksc.nasa.gov/ESMDspacegrant

This site does not require a membership, and provides general information on the ESMD Space Grant project, as well as links for applying for internships.

http://education.ksc.nasa.gov/esmdspacegrant/Space Grant.htm

Contact information for the individual Space Grant Consortia.   Students should always contact their local Space Grant Consortia for specific information on the opportunities available to them within their state.

http://www.nasa.gov/mission_pages/exploration/main/index.html

Check this website for more information on NASA's Vision for Space Exploration.

https://secureworkgroups.grc.nasa.gov/

Exploration Systems Mission Directorate (ESMD) Space Grant Community of Practice where we post future NASA and other related internship and scholarship opportunities, job announcements, and competition information. This page requires membership.
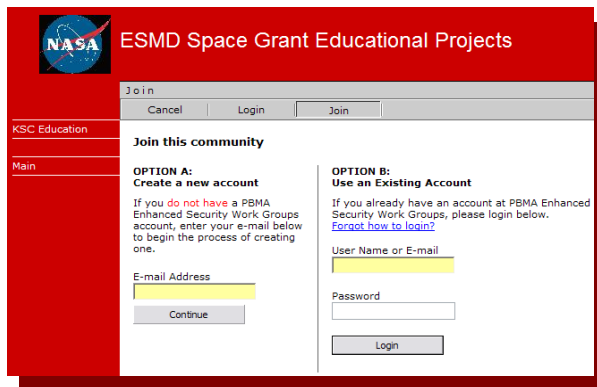
SECTION 2
ESMD COMMUNITY OF PRACTICE

Membership

All students involved with the ESMD Space Grant Educational Projects are asked to join our PBMA Communities of Practice site. ESMD student interns are required to join so that you can submit a student intern report at the end of your work term.

1. Start off with sending an email to Mandi.C.Falconer@nasa.gov to request an invitation to join the PBMA site. In your request, include a comment providing a 1-2 sentence description of the project you are involved with for the ESMD Space Grant project. You will then receive an invitation by email to join the site. Upon receiving your invitation, click on the link provided within the email.

2. Clicking on the link within your email invitation will bring up the following web page. Click on "Join."

3. The next page will ask you to either create a new account or to use an existing PBMA Account. If you have an account already, proceed to login at this screen (and continue with step #6); if not, enter the email you would like associated with the account.

4. After you enter your email and press continue, you will see the following screen. Proceed to fill in all applicable fields. Before you click "Apply to Join" at the bottom of the screen, make sure to go over the Terms of Service and check the appropriate box before continuing.

5

5. You will then need to wait until you receive an additional email saying that your application to join has been approved. You can then click on the link in your email and proceed to log in at the screen that comes up.
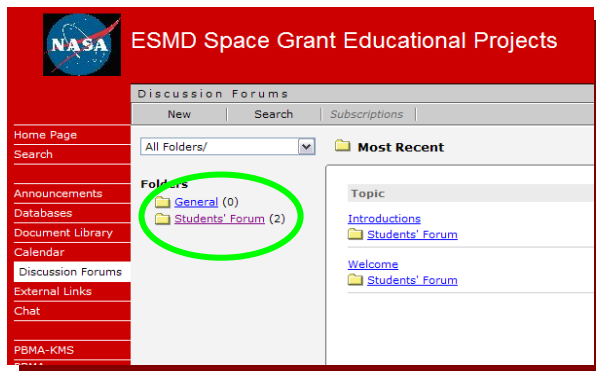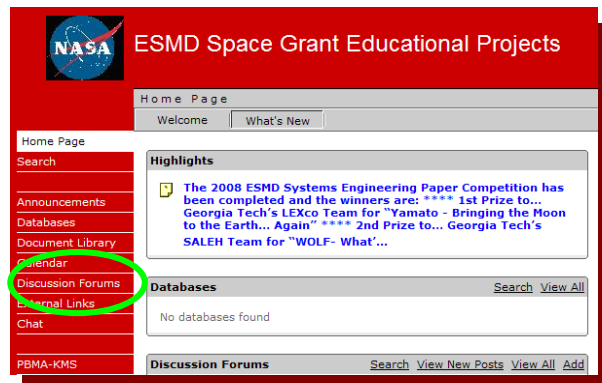

6. The next screen lists the different communities that are available, as well as the communities that you are a member of. In the "My Communities" Section, you should now see a community by the name of "ESMD Space Grant Educational Projects" with the status of "Member." Click on the URL or on the picture to enter the community.
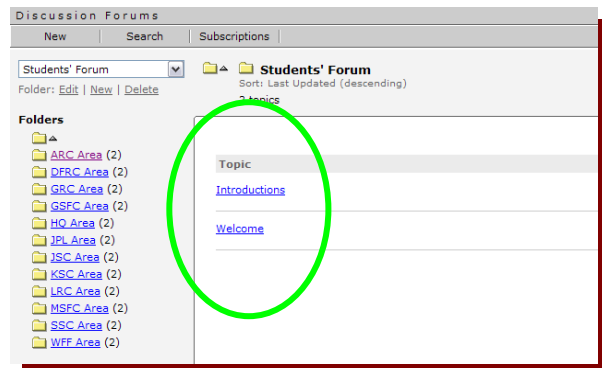
Discussion Forums

1. To begin with the discussion forums, log into the PBMA website, or if you are already logged in, look to the left menu bar for the "Discussion Forums" link.

   NOTE: When you login, there is a "Discussion Forums" box in the center of the main page. Please note that not all discussion forums are listed here, these are just the most current (most recently accessed/changed.)
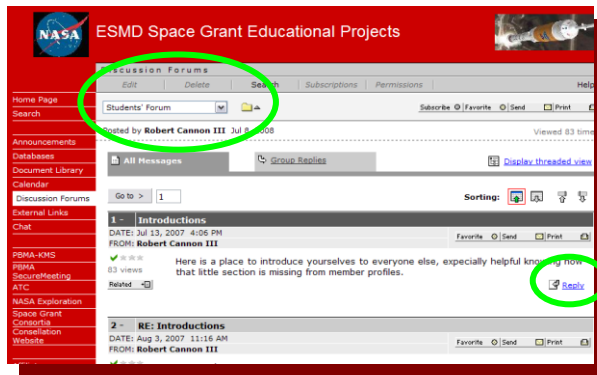
2. For the purposes of this walkthrough, please click on the "Students' Forum" link. Most of the forums for the students are located within this subfolder.

3. This page shows more sub-folders that we have set up in relation to the ten NASA Centers. The main window area of this page contains threads that are common to all students: "Welcome" and "Introductions." To enter a discussion topic, please click on one of the links.
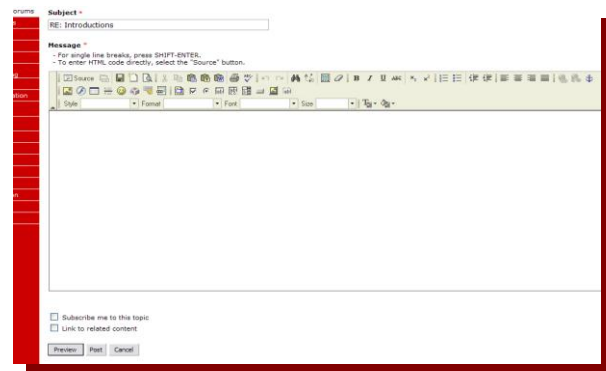
4. To reply to a topic, click on reply. To move back to the forum area (with the topic listings) or to a higher folder, click on the drop down menu and click on the area that you wish to move to.

5. When replying, you move to another page where you can format text with word processing software. When you finish, click on "Preview" or "Post." "Preview" shows you your response in the formatting you specified within a discussion. "Post" will bypass the review stage and will directly post your reply.

These "Discussion Forums" are a great way for you to hear about new ESMD opportunities and for you to communicate with the ESMD Community. Members include ESMD interns, ESMD senior design participants, NASA mentors, industry partners, Space Grant Consortia management and NASA ESMD Project staff.

ESMD STUDENT INTERNSHIP

Application for Student Internship

Students interested in a NASA ESMD Internship must first go to: http://education.ksc.nasa.gov/esmdspacegrant/ to find ESMD Internship opportunities and the password to access the ESMD Intern Application. Then you can link to the ESMD Intern Application on PBMA at: https://secureworkgroups.grc.nasa.gov/esmd-spswg

Internship Eligibility:

- Must be U.S. Citizen to participate. Proof of citizenship will be required if selected.
- Age 18 or older
- Community college, undergraduate and graduate students are eligible to apply
- Minimum of 30 credit hours/45 quarter hours completed
- Minimum GPA of 3.0/4.0
- Enrolled full-time in an accredited U.S. university, college, or community college.

Application Requirements:

A. Electronic submission of your application form is required. You may opt to submit your letters of recommendation and transcripts electronically where indicated within the application form. An official transcript will be required prior to final placement.

OR

B. Electronic submission of your application form is required. If you are not submitting your letters of recommendation and transcripts electronically, then one complete copy of the entire application package must be mailed to:

NASA Education Office
Attention: Gloria Murphy
Mail Code: XA-D
Kennedy Space Center, FL 32899

Note: We recommend that you use "priority mail with confirmation" at your US Post Office to mail your application package. You can then check the status at www.usps.com.

The following items MUST be included in your application package:

1. One printed copy of the application you submitted on-line.
2. One copy each of two letters of recommendation. One must be from a faculty member; the second may be from a faculty member or employer. Letters can be unsealed or sealed and appropriate copies made.
3. One copy of official or unofficial school transcript. Include transcripts from each college or university attended. An official transcript will be required prior to final placement.
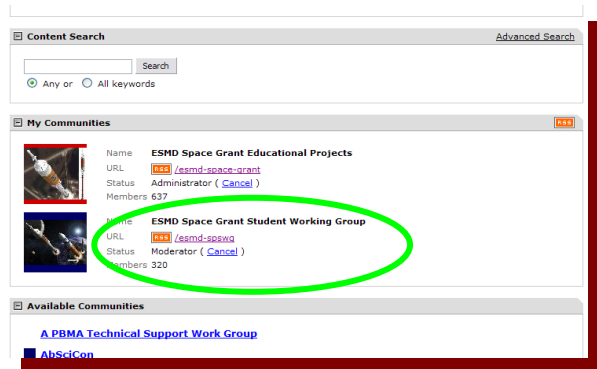
Deadlines and Timelines:

No late applications or partial packages will be accepted. No faxed materials will be accepted (no exceptions). APPLICATIONS MUST BE RECEIVED BY DEADLINE TO BE CONSIDERED.

We will not be able to accept queries regarding the status of individual applications. You will be notified by your Space Grant Consortium if you are selected.

Follow-Up:

You may return to the ESMD Student Application website: https://secureworkgroups.grc.nasa.gov to check on your application status. Make sure you go into the "ESMD Space Grant Student Working Group."

Internship at a NASA Center

Once you have been approved for funding by your Space Grant Consortium (SGC) and selected by a NASA mentor, you will receive notification from your SGC. You will work with them to receive your stipend and travel funds. This is done at their discretion and they may have additional requirements. No one else can make an offer to you for this program. A NASA mentor may contact you, but cannot offer or promise you an internship. You may find your state's Space Grant Consortium contact information at the following website:

http://education.ksc.nasa.gov/esmdspacegrant/Space Grant.htm

You will also need to work with the NASA Educational Contact at the NASA Center where your internship will be to get your badge paperwork completed and to find out about housing, transportation, and other information.

The following are the current NASA Educational POCs for this information:

Center	Point of Contact	E-mail
Ames Research Center	Maricela Varma	mvarma@mail.arc.nasa.gov
Dryden Flight Research Center	Shari Olson	shari.c.olson@nasa.gov
Glenn Research Center	Dave Kankam	mark.d.kankam@nasa.gov
Goddard Space Flight Center	Mablelene Burrell	mablelene.s.burrell@nasa.gov
Johnson Space Center	Veronica Seyl	veronica.l.seyl@nasa.gov
Jet Propulsion Laboratory	Linda Rogers	linda.l.rodgers@jpl.nasa.gov
Kennedy Space Center	Benita DeSuza	benita.w.desuza@nasa.gov
Langley Research Center	Lloyd Evans	lloyd.b.evans@nasa.gov
Marshall Space Flight Center	Mona Miller	mona.miller@nasa.gov
Stennis Space Center	Joy Smith	joy.l.smith@nasa.gov

Valuable Site Specific Information:

KSC: If you are selected for an internship at Kennedy Space Center, you will find valuable information at the following website:
http://education.ksc.nasa.gov/orientation/index.htm

GSFC: If you are selected for an internship at Goddard Space Flight Center, you are required to pay $3,500 for a unified summer program that provides infrastructure, housing and other activities that will yield an enhanced summer experience. Your Space Grant Consortium may be able to help with this expense and your mentor may be able to contribute as well. However, ultimately, payment of this fee is your responsibility. Make arrangements with Mablelene Burrell at GSFC before you arrive.

Internship with an Industry Partner

Contact your Space Grant Consortium to apply for an ESMD internship with industry. You can find your state's Space Grant Consortium contact information at the following website:

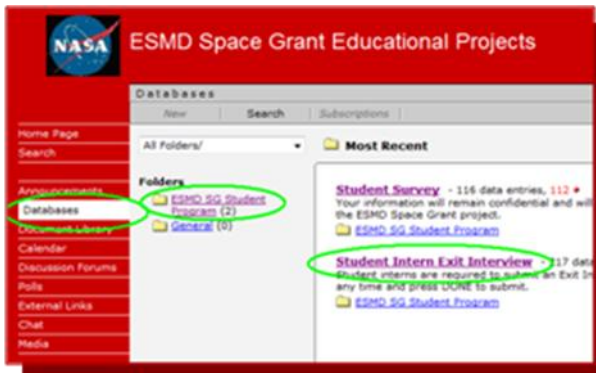http://education.ksc.nasa.gov/esmdspacegrant/Space Grant.htm

NASA's industry partners are valued highly. If you have been selected by an industry partner for an ESMD internship through your Space Grant Consortium, you will be invited to join the ESMD Community of Practice to complete the required ESMD Student Intern Exit Interview and the NEEIS Report.

You will need to stay in communication with your Space Grant Consortium for logistics and stipend payment arrangements.
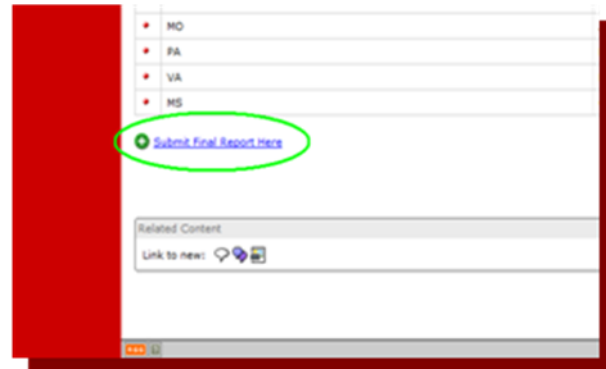
Student Intern Exit Interview

All ESMD student interns are required to submit a report prior to the end of your work term. These instructions assume that you already have a membership at the ESMD Space Grant Educational Projects Community of Practice site.
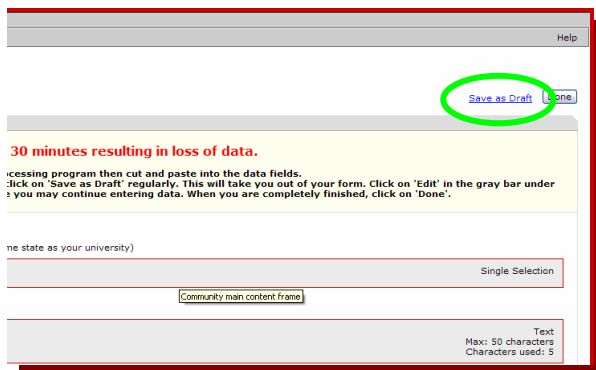

1. Once you are logged in to the PBMA ESMD Space Grant Educational Projects site, at the main page, click on the "Databases" link.

2. At the databases page, click on the folder labeled "ESMD SG Student Program."

3. Within the "ESMD SG Student Program" folder, you will see a link for the "Student Intern Exit Interview." Click on that link.

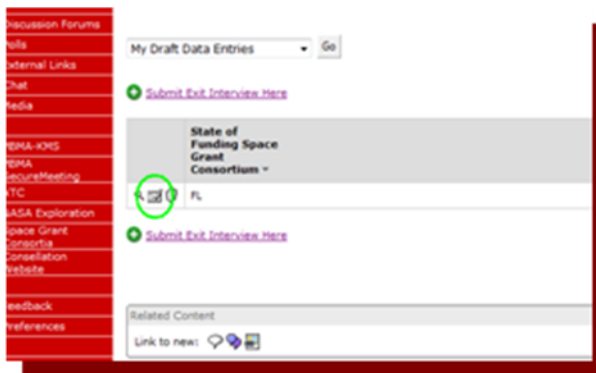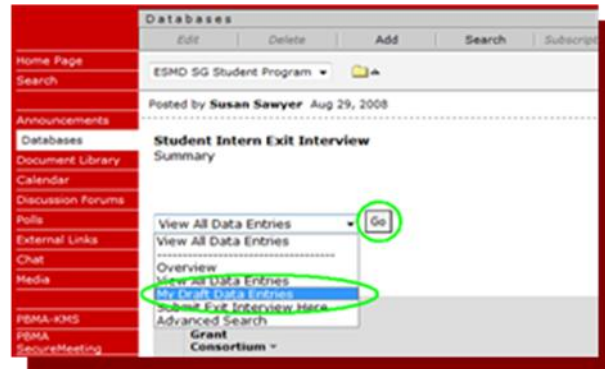4. Next click on "Submit Exit Interview Here"

5. Proceed to fill in the form. Remember that the website will time out after 30 minutes. Typing will not keep the website active. You may type your long entries in a word processing program then cut and paste into the data fields.

6. You may type directly in the data fields and click on 'Save as Draft' regularly. Clicking on "Save as Draft" will take you to a form that shows you what is saved on your submission. If you click on "Edit" at the top of the page it will reopen the submission for the current summary.

13

If you save the form and leave the site or the database, you can return to a previously saved form with the following steps.

Follow steps 1-3. Above the "Submit Exit Interview Here" link there is a drop-down menu; change the drop down menu from "View All Data Entries" to "My Draft Data Entries" and click on "Go."

1. On the page that comes up, previously saved entries will show up. Select the draft that you would like to continue working on.

FREQUENTLY ASKED QUESTIONS (FAQS)

Question: Which college/university should my son/daughter attend to be able to get a job at NASA?

Answer: NASA takes applicants from any university.

Question: What is the Space Grant Consortia?

Answer: NASA provides funds for 52 Space Grant Consortia, a network of affiliated colleges (one in each state, Washington D.C. and Puerto Rico.) Please contact the Space Grant Consortium for universities that offer engineering programs in your area of interest within the state of your choice. Depending on the university your child chooses, the Space Grant Consortium for that state may offer opportunities at NASA such as internships, competitions, senior design projects, etc. within their affiliated universities. You may find out more about the Space Grant Consortia at: http://national.spacegrant.org/

Question: What about your programs in general like internships, competitions, etc.?

Answer: First you need to select a program you are interested in and proceed to complete an application. Each program offers a unique focus on specified areas as well as various start and end dates. Once you have submitted an application, you can be considered for that program. The following links can direct you to the programs that are available:
http://education.nasa.gov
http://education.ksc.nasa.gov

Question: What about funding for senior design projects or competitions?

Answer: The senior design project ideas posted at http://education.ksc.nasa.gov/ESMDSpaceGrant/Sr Design.htm are for a program NASA's Exploration Systems Mission Directorate (ESMD) is sponsoring with the Space Grant Consortiums. You are welcome to ask your professors about using any of these ideas for your senior design projects. However, to obtain funding and participate in discussions with NASA Points of Contacts regarding these subjects you must be sponsored to participate in this program through your state's Space Grant Consortium. Funding for competitions are also done through the Space Grant Consortium. Please contact your state's Space Grant Consortium to obtain more information on their participation in these programs. For a list of contact information for each of the 50 states as well as D.C. and Puerto Rico, please visit: http://education.ksc.nasa.gov/esmdspacegrant/space grant.htm

Question: What about internships?

Answer: Please check http://education.nasa.gov , http://education.ksc.nasa.gov and http://education.ksc.nasa.gov/ESMDSpaceGrant/ESMD_Exploration_Internships.htm for internship opportunities and programs offered by NASA.

Question: I am an international student. Can I still participate?

Answer: Unfortunately no, at this time, NASA can only hire and accept US citizens at the centers due to governmental security regulations. This is not expected to change in the future.

Question: What majors are required?

Answer: Our main focus is STEM (Science, Technology, Engineering, and Mathematics) majors, however there are some opportunities for other majors. We encourage you to look over the internship opportunities and apply for any that seems to suit your background and studies. http://education.ksc.nasa.gov/ESMDspacegrant/ESMD_Exploration_Internships.htm

Question: Can I still submit for this year/semester? (After the deadline)

Answer: Sorry but we must adhere to the application dates. You might be able to apply for a future semester however. Please continue to check the following link for information on dates for when the application(s) will open and close as well as how to apply: http://education.ksc.nasa.gov/ESMDspacegrant/ESMD_Exploration_Internships.htm

APPENDIX A
U.S. CITIZENSHIP REQUIREMENT

You will need to show proof of citizenship to each Center. You also need two forms of ID to receive your badge the first day.

Below is a list of approved documents:

- Voter's registration card

- A birth certificate issued by a state government (must contain original embossed seal) showing birth in one of the 50 States, the District of Columbia, Puerto Rico (on or after January 13, 1941), Guam, the U.S. Virgin Islands (on or after January 17, 1917), American Samoa, Swain's Island or the Northern Mariana Islands, unless the person was born to foreign diplomats residing in the U.S.

- United States passport (unexpired or expired)

- Report of birth abroad of a U.S. citizen (FS-240) (issued by the Department of State to U.S. citizens)

- Certificate of birth (FS-545) (issued by a foreign service post) or Certification of Report of Birth (DS-1350) (issued by the Department of State), copies of which are available from the Department of State

- Certificate of Naturalization (N-550 or N-570) (issued by the INS through a Federal or State court, or through administrative naturalization after December 1990 to individuals who are individually naturalized)

- Certificate of Citizenship (N-560 or N-561) (issued by the INS to individuals who derive U.S. citizenship through a parent)

- United States Citizen Identification Card (I-197) (issued by the INS until April 7, 1983, to U.S. citizens living near the Canadian or Mexican border who needed it for frequent border crossings) (formerly Form I-179, last issued in February 1974)

- Northern Mariana Identification Card (I-873 issued by the INS to a collectively naturalized citizen of the U.S. who was born in the Northern Mariana Islands before November 3, 1986)

- Statement provided by a U.S. Consular Officer certifying that the individual is a U.S. citizen (this is given to an individual born outside the U.S. who derives citizenship through a parent but does not have an FS-240, FS-545 or DS-1350)

- American Indian Card (I-872) with a classification code ³KIC² and a statement on the back (identifying U.S. citizen members of the Texas Band of Kickapoos living near the U.S./Mexican border).